CMSC104

Problem Solving and
Computer Programming
Spring 2010

Sections 1 and 4
Donald C. Dimitroff

Contact Information

- Who am I?
  - Donald C. Dimitroff, M.Ed., M.S.E, M.S.
- Best way to contact me?
  - Email: dondim1@umbc.edu
- Office hours:
  - Where? ITE 225
  - When? Monday and Wednesday
    3:45 pm – 5:30 pm
    or by appointment
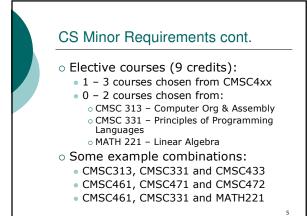   x53928 (410-455-3928)

Am I in the Right Class?

- CMSC 104
  - Assumes NO programming experience
  - Prepares you for CMSC 201
  - Does NOT count directly towards the CS major
  - Meets a requirement for other majors:
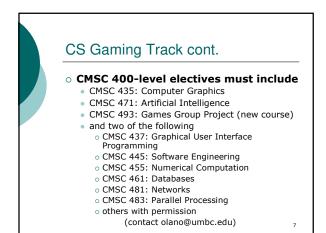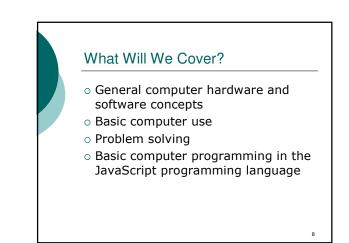   i.e. Physics, Financial Economics
- CMSC 201
  - Assumes some programming experience
  - First CMSC course for CS majors
  - MUCH more challenging

CS Minor Requirements

- Total of 23 credits (7 classes)
- Required courses:
  - CMSC 201 – Comp. Sci. I for Majors
  - CMSC 202 – Comp. Sci. II for Majors
  - CMSC 341 – Data Structures
  - CMSC 203 – Discrete Structures
    (can use MATH 301 instead)

CS Minor Requirements cont.

- Elective courses (9 credits):
  - 1 – 3 courses chosen from CMSC4xx
  - 0 – 2 courses chosen from:
    - CMSC 313 – Computer Org & Assembly
    - CMSC 331 – Principles of Programming Languages
    - MATH 221 – Linear Algebra
- Some example combinations:
  - CMSC313, CMSC331 and CMSC433
  - CMSC461, CMSC471 and CMSC472
  - CMSC461, CMSC331 and MATH221

CS Gaming Track

- Web site: gaim.umbc.edu
- Not a separate degree just a "track" within the regular CS B.S. program
- Must complete all regular CS B.S. requirements plus…
- **Science courses must include**
  - PHYS 121: Introductory Physics I
- **GFR/GEP courses must include**
  - ART 380: History and Theory of Games (new course)

CS Gaming Track cont.

○ **CMSC 400-level electives must include**
- CMSC 435: Computer Graphics
- CMSC 471: Artificial Intelligence
- CMSC 493: Games Group Project (new course)
- and two of the following
  - ○ CMSC 437: Graphical User Interface Programming
  - ○ CMSC 445: Software Engineering
  - ○ CMSC 455: Numerical Computation
  - ○ CMSC 461: Databases
  - ○ CMSC 481: Networks
  - ○ CMSC 483: Parallel Processing
  - ○ others with permission
    (contact olano@umbc.edu)

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What Will We Cover?

○ General computer hardware and software concepts
○ Basic computer use
○ Problem solving
○ Basic computer programming in the JavaScript programming language

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1. General Hardware and Software Concepts

○ Introduction to computer architecture
○ Data representation and memory usage
○ Introduction to operating systems Linux

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2. Basic Computer Use (New software for most of you!)

○ Basic use of
- an operating system (Linux)
- e-mail (pine)
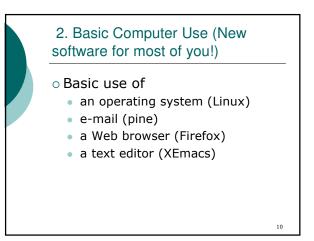- a Web browser (Firefox)
- a text editor (XEmacs)

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3. Problem Solving

○ Problem solving and algorithm development
- general vs. specific solution to a problem
- use of top-down design
- use of pseudocode

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4. Basic Computer Programming

○ Creating and executing a computer program
○ Testing and debugging a computer program
○ JavaScript programming language basics
○ Introduction to C Programming
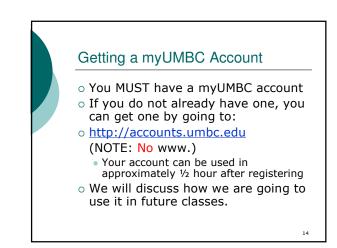
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Course Information

o On the Web: type the following in a web browser, all on one line

www.csee.umbc.edu/~dondim1/104/cmsc104.html

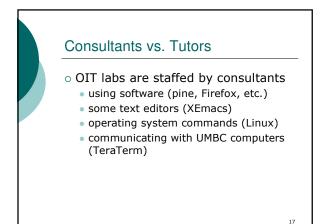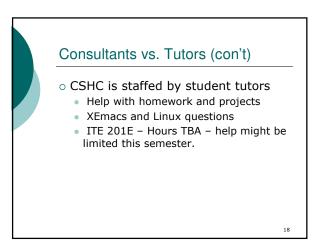o Refer to this site throughout the semester
- Announcements
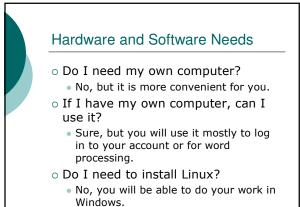- Due dates
- Assignments
- Changes

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Getting a myUMBC Account

o You MUST have a myUMBC account
o If you do not already have one, you can get one by going to:
o http://accounts.umbc.edu
   (NOTE: No www.)
   - Your account can be used in approximately ½ hour after registering
o We will discuss how we are going to use it in future classes.

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Computer Science at UMBC

o CSEE Student Services Office (Advising)
   - ITE 203 - 206
o CSHC (Computer Science Help Center)
   - ITE 201E
o Linux Users Group (LUG)
   - http://lug.umbc.edu
o Computer Science Council of Majors (CSCM)
   - **President**
     Matthew Kalkbrenner mkalk1@umbc.edu

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OIT Labs

o The Office of Information Technology is responsible for all lab computers.
o On Web at: www.umbc.edu/oit
o Labs with PCs:
   - ENG021, ENG104, ENG122, ENG122A, ENG333
o Labs may be on reserve for classes, so plan ahead!
o Print Dispatch -- ENG 019 (10 cents/page?)
o Hours of Operations
   - OIT will post outside of labs or go to: https://spaces.umbc.edu/display/oit2/Lab+Locations

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Consultants vs. Tutors

o OIT labs are staffed by consultants
- using software (pine, Firefox, etc.)
- some text editors (XEmacs)
- operating system commands (Linux)
- communicating with UMBC computers (TeraTerm)

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Consultants vs. Tutors (con't)

o CSHC is staffed by student tutors
- Help with homework and projects
- XEmacs and Linux questions
- ITE 201E – Hours TBA – help might be limited this semester.

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Hardware and Software Needs

- Do I need my own computer?
  - No, but it is more convenient for you.
- If I have my own computer, can I use it?
  - Sure, but you will use it mostly to log in to your account or for word processing.
- Do I need to install Linux?
  - No, you will be able to do your work in Windows.

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Using Your Own Computer: SSH

- We will discuss this in much more detail in future classes. You do not have to download anything at this point!!
- TeraTerm is a software communications program
- Must be connected to the Internet to use
- Two sources for TeraTerm software:
  - OIT CD
  - Web: https://spaces.umbc.edu/display/hd2/Software+Information+(Download)+Overview
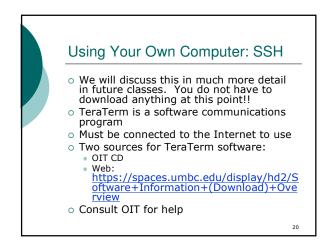- Consult OIT for help

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Getting to Know You

- This class has students from many different backgrounds and majors.
  - ~15 different majors
- I'd like to find out a little bit about what you know. Please take out a sheet of paper.
  - Name, Major, and Year
  - Why are you taking this class?
  - Something you would like me to know about you...

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